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1. Document ID: US 20050064289 A1

AB: The electrode of the present invention is provided with an active material-containing layer comprising as the structural material composite particles composed of an electrode active material, a conductive additive and a binder, and a current collector in electrical contact with the layer. The composite particles are formed by integrating the conductive additive and binder with the electrode active material particles. The active material-containing layer is formed by subjecting powder comprising at least the composite particles to pressurization treatment to form a sheet, and placing the sheet at the location of the current collector at which the active material-containing layer is to be formed. The electrode active material and conductive additive in the active material-containing layer are non-isolated and electrically linked. This construction allows an electrode with excellent electrical characteristics to be realized, which exhibits adequately reduced internal resistance and easily permits increased energy density to be achieved for electrochemical devices.

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2. Document ID: US 20040170821 A1

AB: An electrode sheet of an electric double layer capacitor is produced by using granules for formation of an electrode of an electric double layer capacitor which are obtained by kneading and then crushing materials including an activated material, a conductive filler, and a binder at 50 to 97 mass-%, 1 to 30 mass-%, and 2 to 20 mass-%, respectively, and which are essentially granules whose diameter is in a range of 47 to 840 .mu.m.

A method for manufacturing a sheet-like electrode by mixing and kneading materials including an activated carbon, carbon black, and PTFE into a kneaded material, producing a forming material by converting the kneaded material into granules, and forming and rolling the forming material.

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3. Document ID: US 20040165337 A1

AB: A polarized electrode for an electric double-layer condenser, which has a structure for preventing the damage of the end portion of the electrolyte belonging to the collecting foil, in the process for manufacturing the electric double-layer condenser, and an electric double-layer condenser using the polarized electrode.

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KUMC](#) | [Drawn Des](#)

□ 4. Document ID: US 20040085710 A1

AB: The present invention provides a novel carbon material for a electric double-layer capacitor having characteristics entirely different from prior art activated carbon. The capacitor develops a capacitance by a mechanism entirely different from the mechanism of an electric double-layer capacitor using activated carbon. The novel capacitor has improved performance including capacitance. The capacitor has polarized electrodes immersed in an organic electrolyte. The electrodes are made of a nonporous carbon having crystallites of graphite-like carbon. When a voltage is applied, electrolyte ions are intercalated between the layers of the crystallites of the graphite-like carbon together with the solvent. Thus, electric double layers are formed. Intercalation is induced by the first cycle of charging. In the second and following cycles, the capacitance is developed.

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□ 5. Document ID: US 20020039275 A1

AB: The present invention provides a novel electric double-layer capacitor made of a carbon material having characteristics entirely different from those of the prior art activated carbon. The capacitor develops a capacitance by a mechanism entirely different from the mechanism of an electric double-layer capacitor using activated carbon. The novel capacitor has improved performance including capacitance. The capacitor has polarized electrodes immersed in an organic electrolyte. The electrodes are made of a nonporous carbon having crystallites of graphite-like carbon. When a voltage is applied, electrolyte ions are intercalated between the layers of the crystallites of the graphite-like carbon together with the solvent. Thus, electric double layers are formed. Intercalation is induced by the first cycle of charging. In the second and following cycles, the capacitance is developed.

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□ 6. Document ID: US 6831826 B2

AB: A polarized electrode for an electric double-layer condenser, which has a structure for preventing the damage of the end portion of the electrolyte belonging to the collecting foil, in the process for manufacturing the electric double-layer condenser, and an electric double-layer condenser using the polarized electrode.

[Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KUMC | Drawn Des]

7. Document ID: US 6721168 B2

AB: The present invention provides a novel electric double-layer capacitor made of a carbon material having characteristics entirely different from those of the prior art activated carbon. The capacitor develops a capacitance by a mechanism entirely different from the mechanism of an electric double-layer capacitor using activated carbon. The novel capacitor has improved performance including capacitance. The capacitor has polarized electrodes immersed in an organic electrolyte. The electrodes are made of a nonporous carbon having crystallites of graphite-like carbon. When a voltage is applied, electrolyte ions are intercalated between the layers of the crystallites of the graphite-like carbon together with the solvent. Thus, electric double layers are formed. Intercalation is induced by the first cycle of charging. In the second and following cycles, the capacitance is developed.

[Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KUMC | Drawn Des]

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1. Document ID: US 20040170821 A1

AB: An electrode sheet of an electric double layer capacitor is produced by using granules for formation of an electrode of an electric double layer capacitor which are obtained by kneading and then crushing materials including an activated material, a conductive filler, and a binder at 50 to 97 mass-%, 1 to 30 mass-%, and 2 to 20 mass-%, respectively, and which are essentially granules whose diameter is in a range of 47 to 840 .mu.m.

A method for manufacturing a sheet-like electrode by mixing and kneading materials including an activated carbon, carbon black, and PTFE into a kneaded material, producing a forming material by converting the kneaded material into granules, and forming and rolling the forming material.

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Drawn Des](#)

2. Document ID: US 4717595 A

AB: A molded carbonaceous material which is a molded mixture comprising a carbonaceous powder and a binder, particles of said carbonaceous powder particles being bound together by means of said binder with the surface of said carbonaceous powder being not wholly covered with said binder.

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3. Document ID: JP 2003272961 A

AB: PROBLEM TO BE SOLVED: To increase a capacitance of an electric double layer capacitor.

SOLUTION: This electric double layer capacitor uses a mixture of different sizes of conductive carbonaceous powder for polarized electrodes. The average size of the power is made 2 to 200 times the other smaller powder and the larger diameter powder is mixed 50 to 95% in weight. This means that a larger amount of the conductive carbonaceous powder can be filled, which increases the powder surface areas resulting in an increased static capacity of the capacitor. The conductive carbonaceous powder can be activated carbon, acetylen black or Ketjen black.

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMNC	Drawn Des
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4. Document ID: DE 3530772 A, GB 2166745 A, GB 2166745 B, JP 61058850 A, US 4717595 A

AB: Shaped C-contg. material consists of a moulded mixt. comprising a C-contg. powder and a binder, pref. of latex particles. The particles of the C-contg. powder are bonded together by the binder provided that the surface of the C-contg. powder is not fully covered by the binder.

The content of binder in the shaped mixt. is 15-85wt.%.

USE/ADVANTAGE - The use of the material is polarised electrode in an electrical double layer capacitor is claimed. Other uses are: as deodoriser, discolourant, adsorbent, catalyst support and as conductive electrode. The surface properties of the C-contg. powder are retained.

Moulded carbonaceous material (I) is produced by (a) mixing a carbonaceous powder dispersion with neutral or synthetic latex dispersion selected from natural rubber latex, styrene-butadiene rubber, acrylonitrile butadiene rubber, chloroprene rubber, polyacrylate, polyvinyl acetate, polyvinyl chloride, polyvinyl natural rubber dispersion, regenerated rubber dispersion, stereo-regular rubber lattice and soln. or bulk polymerised, polyer latex; (b) stirring the dispersion mixt. to attach the solid content of the latex as binder to the surface of the carbonaceous powder particles; (c) removing the solvent portion of the stirred mixt. system so as to obtain a mixt. in an aggregated state; and (d) moulding the mixt. in an aggregated state, such that the particles of the carbonaceous powder are bound together by means of the binder, with the surface of the carbonaceous powder being not wholly covered with the binder.

ADVANTAGE - Moulded material (I) retains the surface activity of the carbonaceous powder. (5pp)p

An electric double layer capacitor comprising a polarized electrode, said polarized electrode comprising a molded carbonaceous material which is a molded mixture comprising a carbonaceous powder and a binder, wherein particles of said carbonaceous powder are bound together by means of said binder to form a self-supporting solid body with the surface of said carbonaceous powder being not wholly covered with said binder.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMNC	Drawn Des
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